

Notice of Allowability**Application No.**

10/727,779

Applicant(s)

GARDNER ET AL

Examiner

Angela M. Bertagna

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the BPAI decision of 7/20/10 and Applicant's response of 9/21/10.
2. ☒ The allowed claim(s) is/are 17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20101019.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Kenneth R Horlick/
Primary Examiner, Art Unit 1637

DETAILED ACTION

Status of the Application

1. This office action is in response to the BPAI decision mailed July 20, 2010.

The BPAI affirmed the following rejections: (i) the rejection of claim 11 under 35 U.S.C. 102(e) as being anticipated by Evans, (ii) the rejection of claim 16 under 35 U.S.C. 102(a) and 102(e) as being anticipated by Evans, (iii) the rejection of claim 11 under 35 U.S.C. 103(a) as being unpatentable over Selifonov in view of Evans, and (iv) the rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over Selifonov in view of Evans and further in view of Murphy.

The BPAI reversed the following rejections: (i) the rejection of claim 16 under 35 U.S.C. 112, first paragraph (new matter), (ii) the rejection of claim 17 under 35 U.S.C. 102(a) and 102(e) as being anticipated by Evans, and (iii) the rejection of claim 17 under 35 U.S.C. 103(a) as being unpatentable over Selifonov in view of Evans.

Applicant's submission of an amended claim set on September 21, 2010 is acknowledged. However, the amendment filed on September 21, 2010 cannot be entered, because the period for filing such an amendment is two months from the mailing date of the BPAI decision (MPEP 1214.06). This period for reply is not extendable (MPEP 1216).

In view of the BPAI decision, claims 1-11 and 16 have been canceled, claim 17 has been converted to independent form, and the continuity information in the specification has been updated to reflect the fact that prior-filed Application Serial No. 10/394,337 has been abandoned.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eddie Scott on October 19, 2010.

The application has been amended as follows:

In the claims:

CANCEL CLAIMS 1-11 and 16

Claim 17 (currently amended) ~~The~~ A method of producing a DNA molecule of 1-10 kilobases of user-defined sequence from short oligos of length n (n-mers) ~~of claim 11 comprising the steps of:~~

virtually preselecting a multiplicity of DNA sequence segments that will comprise said DNA molecule of user-defined sequence by using computational techniques to virtually break said user-defined sequence into virtual fragments of length n (n-mers) of defined size,

providing fragments *in vitro* by providing fragments of length n (n-mers) of defined size that correspond to said virtual fragments wherein said multiplicity of DNA sequence segments comprise oligos in multiple reading frames,

arraying fragments *in vitro* by arraying said fragments of length n (n-mers) of defined size into groups,

separating DNA sequence segments temporally *in vitro* by separating said DNA sequence segments of length n (n-mers) of defined size temporally, and

assembling groups *in vitro* by assembling said groups into double-strand DNA molecules of predetermined base-pairs using parallel synthesis, DNA shuffling, and DNA polymerase wherein said step of separating said DNA sequence segments temporally and said step of assembling said groups into double-strand DNA molecules of predetermined base-pairs is accomplished by said DNA sequence segments being added gradually, in an order that is predicted computationally to minimize errors, to produce said DNA molecule of user-defined sequence, and

wherein said step of assembling said groups into double-strand DNA molecules utilizes starting oligos of length n (n-mers) where n is an odd number.

In the specification

Please replace paragraph 2 of the specification with the following paragraph:

This application is a Continuation-in-Part of U.S. Patent Application No. 10/394337 filed March 19, 2003 titled "Constructing Very Long DNA Sequences from Synthetic DNA Molecules" and currently abandoned. U.S. Patent Application No. 10/394337 filed March 19, 2003 titled "Constructing Very Long DNA Sequences from Synthetic DNA Molecules" is incorporated herein by this reference.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance: The instant claims are drawn to a method for constructing a long (1-10 kb) DNA molecule from a plurality of short oligonucleotides in multiple reading frames. As noted in the BPAI decision of July 20, 2010, the term "oligos in multiple reading frames", when read in light of the specification, has a meaning other than the conventional meaning, and requires the oligos to be frame-shifted from one another, and as a result, to hybridize to complementary oligos with different overlap lengths. This feature is not taught in the prior art, and, accordingly, the claimed method is novel and unobvious.

Conclusion

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela M. Bertagna whose telephone number is (571)272-8291. The examiner can normally be reached on M-F, 9- 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth R Horlick/
Primary Examiner, Art Unit 1637

/Angela M Bertagna/
Examiner, Art Unit 1637